

THE DER WEEKLY

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Distributed Energy Resources...the Power of Choice

● Industry News

CCEF Selects Fuel Cell Finalists

Finalists have been selected to receive funding in an RFP program offered by the Connecticut Clean Energy Fund (CCEF). The announcement was made on March 13 at the State Capitol as the official kick-off of the five-year program, which is designed to stimulate the development and commercialization of fuel cell technologies. The program has a 2002 budget of approximately \$8 million and will fund projects in more than 20 Connecticut locations. The finalists' projects include commercial application projects, operational performance demonstration projects (performance measurement and data collection on near-commercial fuel cells), and technical improvement demonstration projects (efficiency improvements and cost reductions). For a summary of each finalist, visit www.ctcleanenergy.com.

CCEF Press Release, March 13

NYPA Implements Energy Reduction Plan

The New York Power Authority (NYPA) has announced a \$3.5 million energy efficiency program for its Clarence D. Rapleyea Building in White Plains. The plan is being implemented as part of Governor Pataki's Executive Order No. 111, which requires all state buildings to reduce energy use by 35 percent (compared to 1990 levels) by 2010. In addition to installing a computerized energy management system and energy efficient lighting, NYPA will replace its old chilled water plant with two new 460-ton chillers. Cooling towers, valves, controls, and two sets of chilled water condenser pumps will be part of this system, which is expected to reduce energy use 50 percent, 2.6 million kWh, and save \$191,000 annually. The energy efficiency plan is expected to decrease the facility's energy use by more than 50 percent.

NYPA is also using the Rapleyea Building to demonstrate clean energy technologies. A 5.5 kW solar energy demonstration unit located on the roof powers parts of the building, and a microturbine generates heat and power for the facility. The parking garage includes charging stations for all-electric vehicles.

Legislation that would remove regulatory barriers and enhance the benefits of energy efficiency programs is pending in the State Senate and Assembly. NYPA is also considering energy

efficiency measures for other buildings it owns and leases.
NYPA Press Release, March 13; Photo

New Mexico Utility Installs Microturbines

Public Service Company of New Mexico (PNM), a combined electric and gas utility, has entered agreements with St. Vincent Hospital and the Hilton Santa Fe to install microturbines on their properties. A Capstone microturbine installed at St. Vincent Hospital began running on March 12 and is expected to generate about 56 kW of electricity, enough to satisfy most of the hospital's electricity needs. It includes a heat exchanger that captures the exhaust heat, which is used to preheat water for the hospital's boilers. A smaller unit will be installed later this spring at the Hilton hotel.



PNM Executive VP Roger Flynn inspects microturbine at St. Vincent's Hospital

The units will be used for a PNM demonstration program, Project Power, which will evaluate new options for ensuring adequate electricity supply for Santa Fe and Las Vegas in 2003-2004. The project is designed to study the performance of the microturbines and to find out how they work in conjunction with the electricity grid. Sandia National Laboratories and New Mexico State University will collect data and help PNM evaluate the results and publish a report on the performance of the microturbines. The data will also be shared with the Electric Power Research Institute.

PNM Release, March 12; Albuquerque Journal, March 13; Photo: www.pnm.com

● DOE News

Advanced Materials Symposium

A symposium entitled "Water Vapor Effects on Oxidation of High-Temperature Materials" was organized by Peter Tortorelli and Karren More of ORNL and Elizabeth Opila of NASA Glenn Research Center. It was held on February 18-20, 2002, as part of the Annual Meeting of the Minerals, Metals, and Materials Society. There were twenty-three presentations (including those from one Japanese and five European organizations). Most of the presentations were relevant to alloy performance for recuperator applications, ceramics for

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Over 100 people attended the Microturbine and Industrial Gas Turbine Peer Review on March 12-14.

Microturbine and Industrial Gas Turbine Peer Review

The Microturbine and Industrial Gas Turbine Peer Review was held March 12-14 at the Hyatt Fair Lakes in Fairfax, VA. This peer review was done in response to both a National Academy of Science recommendation for strategic peer review of programs under the Assistant Secretary for Energy Efficiency and Renewable Energy as well as a Department-wide strategic review to bring programs into alignment with the National Energy Policy.

A peer review of the DER program was held last year in November. Several of the programs within the DER office have already undergone the peer review process including the Energy Storage Program, Distributed Power Program, and Industrial Distributed Generation Program. Peer reviews are scheduled for the Reciprocating Engine Program on April 23-24 in Chicago, IL, and the Integrated Energy Systems and Thermally Activated Technologies Program on April 30-May 2 in Nashville, TN. More information on past and future peer review events can be found at the DER website at www.eren.doe.gov/der. Presentations and meeting agendas for the peer reviews can also be found at this site.

The format of the two-and-a-half day microturbine and industrial gas turbine event included a set of opening remarks and presentations that set the stage for the subsequent projects and gave context to the programs. Dr. Robert Dixon, Deputy Assistant Secretary for the Office of Power Technologies, gave a welcoming address to the conferees and emphasized the importance of the peer review process. Patricia Hoffman, DER Office Director, gave an overview of her office's activities. Several other morning presentations on the gas turbine market and environmental policies provided additional context for the programs. Talks were also given on related microturbine and gas turbine efforts at the California Energy Commission and National Energy Technology Laboratory.

Six industry contractors provided an update on their microturbine activities since receiving awards in 2000. One of these contractors, Solar Turbines, Incorporated, is working on a recuperator project using advanced materials. The goal of this project is to assist turbine manufacturers in offering more durable, higher efficiency turbine generators to produce power at a competitive price. Today's recuperators are in need of higher-performing, cost-effective materials, and Solar has several options they are investigating, including trying to optimize existing recuperator foil material and several novel materials like an advanced austenitic foil and nickel base foil material.

Contractors from the Industrial Gas Turbine Program, which is a follow-up program to the successful Advanced Turbine Systems Program that recently ended, also presented their results and future activities. In the advanced materials for industrial gas turbines area, Teledyne Turbine Engines described work on a novel material for turbomachinery components. They are using titanium silicon carbide powder for static structures like turbine scrolls, inlet nozzles, and turbine rotors. Additional presentations will soon be available on the DER website.

combustion environments, or bond coat oxidation for thermal barrier coating systems. Manuscripts are being collected and will be published in the open literature.

included handout information on DG technologies and fuels and on the upcoming FEMP DER workshop that will be held in Atlanta, May 23-24.

Regional Office News

DG & On-site Power Workshop

The ARO (Atlanta Regional Office) participated in the 6th Annual Distributed Energy & On-Site Power workshop, March 11-13 in Atlanta, GA. The workshop, held by Global Energy Solutions, included DG related discussion topics such as legislation, national security, biogas utilization, aggregating resources, utility involvement, cogeneration and packaged systems, outsourcing, control and communication technologies, reliability, and the PV value connection. Presentations were given by Robert DeVault from Oak Ridge National Laboratory and Christy Herig from the National Renewable Energy Laboratory. ARO staff attended and displayed a booth that

Announcement Race for Earth Day

The Clean Air Council is hosting its 21st annual 5k race across from the Philadelphia Museum of Art for clean air to celebrate Earth Day. Last year approximately 700 runners competed in the race to raise environmental awareness. An awards ceremony will be held immediately following the race, which will include a U.S. Department of Energy Wind Powering America presentation of a Certificate of Recognition to the White Dog Café and its adjacent gift store, The Black Cat. The White Dog Café recently announced (see March 8 DER weekly) that it was generating 100% of its electricity from wind power.

There were over 30 presentations given on microturbines, low emission gas turbines, and advanced materials.

Calendar of Events

MARCH 2002			
17-21	EPRI's 7th Distributed Resources Conference and Expo	Dallas, TX	www.epri.com/programHigh.asp?program=238295&objid=266151
19-21	The Hart World Fuels Conference	San Antonio, TX	www.chemweek.com
19-21	Electric Power 2002	St. Louis, MO	www.electricpowerexpo.com
20-23	Building Energy Conference	Medford, MA	www.nesea.org ; (877) 44-SOLAR, ext. 20
22	Indiana/Caterpillar CHP Workshop	Indianapolis, IN	Ethan Rogers, (317) 232-8961
25-26	Fundamentals of Cogeneration & On-site Generation	Philadelphia, PA	www.aeecenter.org/seminars
26-27	2nd Annual Fuel Cell Investor	New York, NY	www.srinstitute.com/part_iter_site_page.cfm?iteration_id=337
27-28	GLOBALCON Energy/Facilities Management Conference & Expo	Philadelphia, PA	www.aeecenter.org/seminars
APRIL 2002			
2-3	Implementing Renewable Energy Projects	Washington, DC	Gail Norby, (303) 526-5528, gail@imaginitech.com
3-4	The 2002 Hydrogen Investment Forum	Washington, DC	www.intertechusa.com
8	Micropower "Get Connected" Workshop	Toronto, Ontario	www.micropower-connect.org
8-9	Colorado Wind and Distributed Energy: Renewables for Rural Prosperity	Denver, CO	www.state.co.us/oemc
8-9	Fuel Cells and Distributed Power Conference	Stamford, CT	www.bccresearch.com/fuel_cells
10-11	Fuel Cell Roadmap Workshop	College Park, MD	Jan Brinch 410-290-0370
15-17	EESAT 2002, Electric Energy Storage—Applications and Technologies	San Francisco, CA	www.sandia.gov/EESAT ; Dr. Imre Gyuk (202) 586-1482
23-24	Reciprocating Engine Peer Review	Chicago, IL	Brian Marchionini 202-406-4109
30-May2	Thermally Activated Technologies Peer Review	Nashville, TN	Jan Brinch 410-290-0370

Los Alamos National Laboratory, Oak Ridge National Laboratory, and the Office of Power Technologies had exhibits at the conference.

Calendar of Events

APRIL 2002			
16-17	Second DOE/UN International Conference and Workshop on Hybrid Power Systems	Charlotte, NC	www.netl.doe.gov click on "events"
21-23	4th Annual Small Fuel Cells Conference	Washington, DC	custserv@knowledgefoundation.com
30-May2	Houston Energy Expo	Houston, TX	www.nesamet.org
MAY 2002			
1-3	External Combustion Engines—New Strategies for Efficient, Green Power Generation	Los Angeles, CA	chuck@intertechusa.com
2	Green Power: Turn it On! Getting to 10% Conference	Harrisburg, PA	Maryanne Daniel; 215-656-6964
12-15	The 8th National Clean Cities Conference and Expo	Oklahoma City, OK	www.cccities.doe.gov/conference.shtml
14-16	E-Vision 2002: Shaping Our Future by Reducing Energy Intensity in the U.S. Economy	Arlington, VA	Jeff Dowd; jeff.dowd@ee.doe.gov
20	Congressional Fuel Cell Expo	Washington, DC	www.usfcc.com
23-24	FEMP DER Workshop	Atlanta, GA	Lisa Hollingsworth 404-562-0569
JUNE 2002			
2-5	Energy 2002 Workshop and Expo: Hot Challenges, Cool Solutions	Palm Springs, CA	(703) 243-8343, www.energy2002.ee.doe.gov
6-7	West Coast Energy Management Congress	Anaheim, CA	(703) 243-8343, www.aeecenter.org
16-18	National Accounts Conference and Exhibition (American Gas Association)	Nashville, TN	TheGasChoice.com
25-26	DER FEMP Workshop	Chicago, IL	Marion Rawson 202-479-2748
26-29	Building Energy 2002 and the Mid-Atlantic Sustainability Conference	East Brunswick, NJ	www.nesea.org
AUGUST 2002			
18-23	Summer Study on Energy Efficiency in Buildings	Pacific Grove, CA	www.aceee.org

A panel of six distinguished gas turbine experts reviewed the programs throughout the conference.